August 26, 2019

Non responsive due to revised scope
Environmental Restoration, LLC
1666 Fabick Drive
Fenton, MO 63026

Certificate of Analysis

Project Name:	**Soil Samples**	Workorder:	**3052747**
Purchase Order:		Workorder ID:	**Shiloh Church Rd/3-5476**

Dear Non responsive due to revise:

Enclosed are the analytical results for samples received by the laboratory on Tuesday, August 20, 2019.

The Non responsive due to revised scope is a National Environmental Laboratory Accreditation Program (NELAP) accredited laboratory and as such, certifies that all applicable test results meet the requirements of NELAP.

If you have any questions regarding this certificate of analysis, please contact Non responsive due to revised scope

Analyses were performed according to our laboratory's NELAP-approved quality assurance program and any applicable state requirements. The test results meet requirements of the current NELAP standards or state requirements, where applicable. For a specific list of accredited analytes, refer to the certifications section of the Non responsive due to revised scope

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Project Coordinator

This page is included as part of the Analytical Report and must be retained as a permanent record thereof.

SAMPLE SUMMARY

Workorder: 3052747 Shiloh Church Rd/3-5476

Lab ID	Sample ID	Matrix	Date Collected	Date Received	Collected By
3052747001	Mound 02	Solid	8/19/2019 11:30	8/20/2019 08:56	Collected by Client
3052747002	Mound 03	Solid	8/19/2019 12:00	8/20/2019 08:56	Collected by Client

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SAMPLE SUMMARY

Workorder: 3052747 Shiloh Church Rd/3-5476

Notes

-- Samples collected by [redacted] personnel are done so in accordance with the procedures set forth in the [redacted] Field Sampling Plan (20 - Field Services Sampling Plan).
-- All Waste Water analyses comply with methodology requirements of 40 CFR Part 136.
-- All Drinking Water analyses comply with methodology requirements of 40 CFR Part 141.
-- Unless otherwise noted, all quantitative results for soils are reported on a dry weight basis.
-- The Chain of Custody document is included as part of this report.
-- All Library Search analytes should be regarded as tentative identifications based on the presumptive evidence of the mass spectra. Concentrations reported are estimated values.
-- Parameters identified as "analyze immediately" require analysis within 15 minutes of collection. Any "analyze immediately" parameters not listed under the header "Field Parameters" are preformed in the laboratory and are therefore analyzed out of hold time.
-- Method references listed on this report beginning with the prefix “S” followed by a method number (such as S2310B-97) refer to methods from “Standard Methods for the Examination of Water and Wastewater”.
-- For microbiological analyses, the "Prepared" value is the date/time into the incubator and the "Analyzed" value is the date/time out the incubator.
-- An Analysis-Prep Method Cross Reference Table is included after Analytical Results & Qualifiers section in this report.

Standard Acronyms/Flags

J	Indicates an estimated value between the Method Detection Limit (MDL) and the Practical Quantitation Limit (PQL) for the analyte
U	Indicates that the analyte was Not Detected (ND)
N	Indicates presumptive evidence of the presence of a compound
MDL	Method Detection Limit
PQL	Practical Quantitation Limit
RDL	Reporting Detection Limit
ND	Not Detected - indicates that the analyte was Not Detected at the RDL
Cntr	Analysis was performed using this container
RegLmt	Regulatory Limit
LCS	Laboratory Control Sample
MS	Matrix Spike
MSD	Matrix Spike Duplicate
DUP	Sample Duplicate
%Rec	Percent Recovery
RPD	Relative Percent Difference
LOD	DoD Limit of Detection
LOQ	DoD Limit of Quantitation
DL	DoD Detection Limit
I	Indicates reported value is greater than or equal to the Method Detection Limit (MDL) but less than the Report Detection Limit (RDL)
(S)	Surrogate Compound
NC	Not Calculated
*	Result outside of QC limits

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ANALYTICAL RESULTS

Workorder: 3052747 Shiloh Church Rd/3-5476

Lab ID: **3052747001** Date Collected: 8/19/2019 11:30 Matrix: Solid

Sample ID: **Mound 02** Date Received: 8/20/2019 08:56

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	Cntr
PCBs									Non responsive	
Total Polychlorinated Biphenyl	ND		mg/kg	3490	SW846 8082A	8/21/19 17:00	J1H	8/25/19 22:38		A
Aroclor-1016	ND	1	mg/kg	384	SW846 8082A	8/21/19 17:00	J1H	8/25/19 22:38		A
Aroclor-1221	ND		mg/kg	384	SW846 8082A	8/21/19 17:00	J1H	8/25/19 22:38		A
Aroclor-1232	ND		mg/kg	384	SW846 8082A	8/21/19 17:00	J1H	8/25/19 22:38		A
Aroclor-1242	ND		mg/kg	384	SW846 8082A	8/21/19 17:00	J1H	8/25/19 22:38		A
Aroclor-1248	ND		mg/kg	384	SW846 8082A	8/21/19 17:00	J1H	8/25/19 22:38		A
Aroclor-1254	1220		mg/kg	384	SW846 8082A	8/21/19 17:00	J1H	8/25/19 22:38		A
Aroclor-1260	ND		mg/kg	384	SW846 8082A	8/21/19 17:00	J1H	8/25/19 22:38		A
Surrogate Recoveries	*Results*	*Flag*	*Units*	*Limits*	*Method*	*Prepared*	*By*	*Analyzed*		*ntr*
Decachlorobiphenyl (S)	0	3	%	49 - 115	SW846 8082A	8/21/19 17:00	J1H	8/25/19 22:38		A
Tetrachloro-m-xylene (S)	0	2	%	27 - 137	SW846 8082A	8/21/19 17:00	J1H	8/25/19 22:38		A
WET CHEMISTRY										
Moisture	15.2		%	0.1	S2540G-11			8/21/19 10:45		
Total Solids	84.8		%	0.1	S2540G-11			8/21/19 10:45		
TCLP METALS										
Arsenic, Total	ND		mg/L	0.14	SW846 6010C	8/22/19 17:15	SXC	8/23/19 11:08		A1
Barium, Total	ND		mg/L	2.8	SW846 6010C	8/22/19 17:15	SXC	8/23/19 11:08		A1
Cadmium, Total	3.4		mg/L	0.011	SW846 6010C	8/22/19 17:15	SXC	8/23/19 11:08		A1
Chromium, Total	ND		mg/L	0.028	SW846 6010C	8/22/19 17:15	SXC	8/23/19 11:08		A1
Lead, Total	203		mg/L	0.033	SW846 6010C	8/22/19 17:15	SXC	8/23/19 11:08		A1
Selenium, Total	ND		mg/L	0.11	SW846 6010C	8/22/19 17:15	SXC	8/23/19 11:08		A1
Silver, Total	ND		mg/L	0.022	SW846 6010C	8/22/19 17:15	SXC	8/23/19 11:08		A1

Project Coordinator

ANALYTICAL RESULTS

Workorder: 3052747 Shiloh Church Rd/3-5476

Lab ID: **3052747002** Date Collected: 8/19/2019 12:00 Matrix: Solid

Sample ID: **Mound 03** Date Received: 8/20/2019 08:56

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	Cntr
PCBs									Non responsive	
Total Polychlorinated Biphenyl	ND		mg/kg	3570	SW846 8082A	8/21/19 17:00	J1H	8/25/19 23:01		A
Aroclor-1016	ND	1	mg/kg	393	SW846 8082A	8/21/19 17:00	J1H	8/25/19 23:01		A
Aroclor-1221	ND		mg/kg	393	SW846 8082A	8/21/19 17:00	J1H	8/25/19 23:01		A
Aroclor-1232	ND		mg/kg	393	SW846 8082A	8/21/19 17:00	J1H	8/25/19 23:01		A
Aroclor-1242	ND		mg/kg	393	SW846 8082A	8/21/19 17:00	J1H	8/25/19 23:01		A
Aroclor-1248	ND		mg/kg	393	SW846 8082A	8/21/19 17:00	J1H	8/25/19 23:01		A
Aroclor-1254	1120		mg/kg	393	SW846 8082A	8/21/19 17:00	J1H	8/25/19 23:01		A
Aroclor-1260	ND		mg/kg	393	SW846 8082A	8/21/19 17:00	J1H	8/25/19 23:01		A
Surrogate Recoveries	*Results*	*Flag*	*Units*	*Limits*	*Method*	*Prepared*	*By*	*Analyzed*		*Cntr*
Decachlorobiphenyl (S)	0	3	%	49 - 115	SW846 8082A	8/21/19 17:00	J1H	8/25/19 23:01		A
Tetrachloro-m-xylene (S)	0	2	%	27 - 137	SW846 8082A	8/21/19 17:00	J1H	8/25/19 23:01		A
WET CHEMISTRY										
Moisture	19.3		%	0.1	S2540G-11			8/21/19 10:45		
Total Solids	80.7		%	0.1	S2540G-11			8/21/19 10:45		
TCLP METALS										
Arsenic, Total	ND		mg/L	0.14	SW846 6010C	8/22/19 17:15	SXC	8/23/19 11:12		A1
Barium, Total	ND		mg/L	2.8	SW846 6010C	8/22/19 17:15	SXC	8/23/19 11:12		A1
Cadmium, Total	2.2		mg/L	0.011	SW846 6010C	8/22/19 17:15	SXC	8/23/19 11:12		A1
Chromium, Total	ND		mg/L	0.028	SW846 6010C	8/22/19 17:15	SXC	8/23/19 11:12		A1
Lead, Total	16.2		mg/L	0.033	SW846 6010C	8/22/19 17:15	SXC	8/23/19 11:12		A1
Selenium, Total	ND		mg/L	0.11	SW846 6010C	8/22/19 17:15	SXC	8/23/19 11:12		A1
Silver, Total	ND		mg/L	0.022	SW846 6010C	8/22/19 17:15	SXC	8/23/19 11:12		A1

Project Coordinator

ANALYTICAL RESULTS

Workorder: 3052747 Shiloh Church Rd/3-5476

PARAMETER QUALIFIERS

Lab ID	#	Sample ID	Analytical Method	Analyte
3052747001	1	Mound 02	SW846 8082A	Aroclor-1016
This sample was analyzed at a dilution in the 8082 PCB analysis due to the level of Aroclor detected. Reporting limits were adjusted accordingly. One or more of the surrogates could not be evaluated as a result of the dilution.				
3052747001	2	Mound 02	SW846 8082A	Tetrachloro-m-xylene
The surrogate Tetrachloro-m-xylene for method SW846 8082A was outside of control limits. The % Recovery was reported as 0 and the control limits were 27 to 137. This result was reported at a dilution of 10000.				
3052747001	3	Mound 02	SW846 8082A	Decachlorobiphenyl
The surrogate Decachlorobiphenyl for method SW846 8082A was outside of control limits. The % Recovery was reported as 0 and the control limits were 49 to 115. This result was reported at a dilution of 10000.				
3052747002	1	Mound 03	SW846 8082A	Aroclor-1016
This sample was analyzed at a dilution in the 8082 PCB analysis due to the level of Aroclor detected. Reporting limits were adjusted accordingly. One or more of the surrogates could not be evaluated as a result of the dilution.				
3052747002	2	Mound 03	SW846 8082A	Tetrachloro-m-xylene
The surrogate Tetrachloro-m-xylene for method SW846 8082A was outside of control limits. The % Recovery was reported as 0 and the control limits were 27 to 137. This result was reported at a dilution of 10000.				
3052747002	3	Mound 03	SW846 8082A	Decachlorobiphenyl
The surrogate Decachlorobiphenyl for method SW846 8082A was outside of control limits. The % Recovery was reported as 0 and the control limits were 49 to 115. This result was reported at a dilution of 10000.				

ANALYSIS - PREP METHOD CROSS REFERENCE TABLE

Workorder: 3052747 Shiloh Church Rd/3-5476

Lab ID	Sample ID	Analysis Method	Prep Method
3052747001	Mound 02	S2540G-11	
3052747001	Mound 02	SW846 6010C	SW846 3015
3052747001	Mound 02	SW846 8082A	SW846 3546
3052747002	Mound 03	S2540G-11	
3052747002	Mound 03	SW846 6010C	SW846 3015
3052747002	Mound 03	SW846 8082A	SW846 3546

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[redacted]

CHAIN OF CUSTODY / REQUEST FOR ANALYSIS

ALL SHADED AREAS MUST BE COMPLETED BY THE CLIENT / SAMPLER. INSTRUCTIONS ON THE BACK.

COC / ALS

* 3 0 5 2 7 4 7 *

of 1

Client Name: ENVIRONMENTAL RESTORATION
Address: 1666 FABICK DRIVE FENTON, MO 63026
Contact: [redacted]
Phone#: [redacted]
Project Name/#: SHILOH CHURCH RD. / 13-3476
Bill To:

TAT: ☐ Normal-Standard TAT is 10-12 business days. ☒ Rush-Subject to [redacted] approval and surcharges.
Date Required: 8/26/19 Approved?
Email? ☒ Y [redacted]
Fax? ☐ Y No.: 636 680 2545

Container Type: G | Container Size: 16oz | Preservative: N/A

ANALYSES/METHOD REQUESTED: PCB & TCLP METALS NO MERCURY

W.O. Temp: ____ Therm ID: ____
Analyst Initials: ____
Courier/Tracking #:
Purchase Order #:
Project Comments:

Field Services: ☐ Pickup ☐ Labor ☐ Composite Sampling ☐ Rental Equipment
Other:

	Sample Description/Location (as it will appear on the lab report)	Date Collected mm/dd/yy	Time hh:mm	*G or C	**Matrix	PCB & TCLP METALS NO MERCURY	Sample/COC Comments
1	MOUND 82	08/19/19	1130	C	SO	X	
2	MOUND 83	08/19/19	1200	C	SO	X	5 DAY TAT
3						CLS 8/20/19	
4							
5							
6							
7							
8							
9							
10							

SA[redacted]

Sampler Comments: NO TCLP MERCURY 5 DAY TAT

	Relinquished By	Date	Time		Received By / Company Name	Date	Time
1	[redacted]	8/19/19	1300	2	Fed X		
3	FED X			4	[redacted]	8/20/19	0156
5				6			
7				8			
9				10			

Data Deliverables: ☒ Standard ☐ CLP-like ☐ USACE/DOD ☐

Reportable to PADEP? Yes ☐ No ☒
PWSID #

EDDS: Format Type-

Special Processing: USACE ☐ ☐ ☐

Sample Disposal: Lab ☐ Special ☐

State Samples Collected In: ☐ NY ☐ NJ ☐ PA ☐ ☒ VA other

* G=Grab; C=Composite **Matrix - AI=Air; DW=Drinking Water; GW=Groundwater; OI=Oil; OL=Other Liquid; SL=Sludge; SO=Soil; WP=Wipe; WW=Wastewater

Rev 04/19

[redacted]

Non responsive due to revised scope [redacted]

Condition of Sample Receipt Form

Client: Environmental Restoration | Work Order #: 3052747 | Initia Non responsive du [redacted] | Date: 8/20/19

1. Were airbills / tracking numbers present and recorded?	NONE	YES	NO
Tracking number: 7760 1851 4175			
2. Are Custody Seals on shipping containers intact?	NONE	YES	NO
3. Are Custody Seals on sample containers intact?	NONE	YES	NO
4. Is there a COC (Chain-of-Custody) present?		YES	NO
5. Are the COC and bottle labels complete, legible and in agreement?		YES	NO
5a. Does the COC contain sample locations?		YES	NO
5b. Does the COC contain date and time of sample collection for all samples?		YES	NO
5c. Does the COC contain sample collectors name?		YES	NO
5d. Does the COC note the type(s) of preservation for all bottles?		YES	NO
5e. Does the COC note the number of bottles submitted for each sample? filled in by Non responsive [redacted]		YES	NO
5f. Does the COC note the type of sample, composite or grab?		YES	NO
5g. Does the COC note the matrix of the sample(s)?		YES	NO
6. Are all aqueous samples requiring preservation preserved correctly?	N/A	YES	NO
7. Were all samples placed in the proper containers for the requested analyses, with sufficient volume?		YES	NO
8. Are all samples within holding times for the requested analyses?		YES	NO
9. Were all sample containers received intact and headspace free when required? (not broken, leaking, frozen, etc.)		YES	NO
10. Did we receive trip blanks (applies only for methods EPA 504, EPA 524.2 and 1631E (LL Hg)?	N/A	YES	NO
11. Were the samples received on ice?		YES	NO
12. Were sample temperatures measured at 0.0-6.0°C		YES	NO
13. Are the samples DW matrix ? If YES, fill out Reportable Drinking Water questions below		YES	NO
13a. Are the samples required for SDWA compliance reporting?	N/A	YES	NO
13b. Did the client provide a SDWA PWS ID#?	N/A	YES	NO
13c. Are all aqueous unpreserved SDWA samples pH 5-9?	N/A	YES	NO
13d. Did the client provide the SDWA sample location ID/Description?	N/A	YES	NO
13e. Did the client provide the SDWA sample type (D, E, R, C, P, S)?	N/A	YES	NO

Cooler #: ____

Temperature (°C): 2

Thermometer ID: 318525

Radiological (µCi): ____ Non responsive due [redacted]

COMMENTS (Required for all NO responses above and any sample non-conformance):

Rev. 4/29/2019

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